ECS/EMD Configuration Change Request

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1. Originator Henry Baez	2. Log Date: 04/21/2005	3. CCR #: 05-0177	4. Rev:	5. Tel: 301-925-1025	6. Rm #: 3108G	7. Org. COTS HW

8. CCR Title: Change VATC & PVC firewall from 32-bit kernel to 64-bit kernel mode.

9. Originator Signature/Date Henry Baez /s/ 04/21/2005	10. Class IN	11. Type: CCR	12. Need Date: 4/21/2005

13. CCR Sponsor Signature/Date Pamela Johnson /s/ 04/20/2005	14. Category of Change: PSR	15. Priority: (If "Emergency" fill in Block 27). Emergency

16. Documentation/Drawings Impacted *(Review and submit checklist):*	17. Schedule Impact:	18. CI(s) Affected:

19. Release Affected by this Change:	20. Date due to Customer:	21. Estimated Cost: None - Under 100K

22. Source Reference: ☒NCR (attach) ☐Action Item ☐Tech Ref. ☐GSFC ☐Other:
42565

23. Problem: (use additional Sheets if necessary)
GSFC/SMC have been experiencing intermittent response time degradation by M&O to BO/SMC ssh users. This intermittent issue affects secure shell sessions and results in very slow response time within client window. Command entry results in three to ten second delays before prompt is returned. This problem affects SSH connections that cross networks (i.e. M&O to B0, M&O to SMC). The impact on flows like FTP and WWW (ftp proxy, webgate, httpd) do not appear to be as much, but logically some impact is believed to affect non-SSH flows and connections.

24. Proposed Solution: (use additional sheets if necessary)
Investigation using IBM tools/commands shows that the interfaces are running out of memory buffer (mbuff) resources. But with current configuration, we cannot do anything to remedy the situation. Currently the IBM OS is running in 32-bit kernel mode and this limits us to 1GB of the 4GB of real memory allocated to mbuff usage. We need to change the kernel to run in 64-bit mode in order to allocate another 1GB of memory for use by mbuff. The recommendation is for 1/2 of real memory be allocated to mbuff usage. Need to do testing in VATC first. If no problems, would change PVC afterwards.

25. Alternate Solution: (use additional sheets if necessary)
None.

26. Consequences if Change(s) are not approved: (use additional sheets if necessary)
GDAAC performance would continue to suffer and impact operations.

27. Justification for Emergency (If Block 15 is "Emergency"):
This is a very high priority item for GDAAC. But GDAAC would like us to test this here on the VATC firewall before they do changes to operational firewall. Need to do this by next Monday, 4/25/2005.

28. Site(s) Affected: ☐EDF ☒PVC ☒VATC ☐EDC ☐GSFC ☐LaRC ☐NSIDC ☐SMC ☐AK ☐JPL ☐EOC ☐IDG Test Cell ☐Other

29. Board Comments:	30. Work Assigned To:	31. CCR Closed Date:

32. SCDV CCB Chair (Sign/Date): Byron V. Peters /s/ 4/22/2005	Disposition: Approved App/Com. Disapproved Withdraw Fwd/ESDIS ERB Fwd/ECS
33. EDF CCB Chair (Sign/Date):	Disposition: Approved App/Com. Disapproved Withdraw Fwd/ESDIS ERB Fwd/ECS
34. ECS CCB Chair (Sign/Date):	Disposition: Approved App/Com. Disapproved Withdraw Fwd/ESDIS ERB Fwd/ESDIS

CM01JA00 Revised 10/2/03   ECS/EDF/SCDV

ADDITIONAL SHEET

CCR #: 05-0177   **Rev:**   **Originator:** Henry Baez

Telephone: 301-925-1025   **Office:** 3108G

Title of Change: Change VATC & PVC firewall from 32-bit kernel to 64-bit kernel mode.

From 32-bit to 64-bit -
Log in as root.
Create symbolic link for 64-bit kernel as follows:

  # ln -sf /usr/lib/boot/unix_64   /unix <ENTER>

  #ln -sf /usr.lib/boot/unix_64   /usr/lib/boot/unix <ENTER>

  #lslv -m hd5 <ENTER>

Create new boot image as follows:

  #bosboot -ad /dev/ipldevice <ENTER>

Reboot system with following command:

  #shutdown -FR

Check that AIX kerenl is 64-bit with as follows:

  #bootinfo -K

On screen show see echoed the number '64'.

From 64-bit to 32-bit -
Log in as root.
Create symbolic link for 64-bit kernel as follows:

  # ln -sf /usr/lib/boot/unix_mp   /unix <ENTER>

  #ln -sf /usr.lib/boot/unix_mp   /usr/lib/boot/unix <ENTER>

  #lslv -m hd5 <ENTER>

Create new boot image as follows:

  #bosboot -ad /dev/ipldevice <ENTER>

Reboot system with following command:

  #shutdown -FR

Check that AIX kerenl is 64-bit with as follows:

  #bootinfo -K

On screen show see echoed the number '64'.